

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

LIBRARY
RECEIVED
★ JULY 1 1934 ★
U. S. Department of Agriculture
POLICY

A CAMP GROUND

By

E. P. MEINECKE, *Principal Pathologist*

Division of Forest Pathology

Bureau of Plant Industry

U. S. Department of Agriculture

THE DAMAGE

The use of publicly owned land for camping has grown in the last decades from modest beginnings to such enormous proportions that the entire administrative machinery is affected thereby. Where formerly the tourist business was but a negligible item, easily taken care of, it now presents one of the biggest and most difficult problems of adjustment to changing conditions. The liberality with which the public has been invited to make itself at home in parks and forests has borne far heavier fruit than could have been expected. The growth once started cannot now be stopped. The tourist business will continue to increase, and it must be adequately provided for. The administration of public lands no longer has a choice in the matter.

Attention has been called, some years ago,* to the fact that heavy concentration of tourists in certain localities seriously damages the native vegetation and brings about a slow but steady destruction of the very features that make these localities attractive. The injury referred to came about through the heavy trampling, over a series of years, by a great number of people on foot, walking over the same places to the exclusion of others. This tramping down of the soil results in the destruction of the natural ground cover of herbaceous plants which is necessary for the maintenance of soil fertility and in the formation of a dense sheet of compressed surface soil which hinders the percolation of rain and prevents proper ventilation of the soil. The consequence is the setting up of an abnormal condition within the soil which in turn affects the roots of shrubs and trees. One after the other, these forms of vegetation begin to suffer and finally succumb.

This type of injury resulting from unregulated travel is plainly noticeable in the immediate vicinity of certain spectacular and particularly attrac-

(*) E. P. Meinecke. A Report upon the effect of excessive tourist travel on the California Redwood Parks. California Depart. Natural Resources, Division of Parks, Sacramento, 1928.

tive features, such as selected giant trees in the Sequoia forests and in old camps where for many decades tourists have foregathered in great numbers. More recently, and to an alarming degree within the last few years, another potent factor namely the automobile, has brought new and serious complications. The Sequoias are protected from the automobile, but not so the camping grounds.

If unregulated foot travel was responsible for noticeable damage, it is not to be wondered at that the machine causes far greater injury. Man, in walking, makes a narrow path and compresses the soil at points a pace apart with about 140 lbs. on the average. The car with its ton and a half of weight makes a continuous wide track on its four tires. Man injures only those smaller plants that he actually tramples under foot. The car, much clumsier to handle, crushes shrubs and sideswipes trees, tearing off living bark and severely injuring them. Oil, a deadly poison to plants, drips from the parked automobile.

A single invasion of a new camp site by an automobile would soon be repaired. It is the constant repetition of the injurious action, day after day, year after year, that ends in disaster, and the final result is the destruction of the elements that make a certain locality suitable for camping.

That this destruction of camping grounds has gone very far, in fact has come close to the danger point, cannot be doubted. (Figs. 1 and 2). Repeated inspections, during the last years, of hundreds of camping grounds in National forests, National and State Parks and in municipal ownership have shown, all too plainly, that even the most recent camps are affected, that the great majority are in danger and that an alarming number are practically useless or already abandoned.

There can be no doubt that lack of regulation is the chief element in the deterioration of camp grounds. Nowadays camping grounds are purposely set aside for use, but the actual dividing up and the utilization for individual camp sites is generally still left to the whim of the visitor. Once a site has been used, as evidenced by the car tracks, the dead ashes of camp fires and the opening up of the virgin vegetation, few physical changes are introduced by the next visitor. He follows where others have gone before rather than going to the trouble of breaking new ground, but he intensifies the effect on nature of those who have preceded him. When he leaves, the automobile tracks are widened and new ones are added. There is another heap of ashes, where nothing can grow for years to come. More ground is cleared and more trees are wounded. Every subsequent visitor adds to the destruction. It is the first camper who decides the physical arrangement and therewith the ultimate fate of the camp site.



Fig. 1

Camp ground showing the effect of unregulated use. All ground cover and all young trees are gone. Note the stumps of larger trees at exposed places. The ground is deep in dust. (*Photo, L. A. Barrett.*)



Fig. 2

Camp ground ruined by uncontrolled use. The flat was formerly covered with trees. Note the many tree stumps and the dying and dead trees in the background. The open space is constantly growing in extent as the campers are moving back into the timber. (*phot. Dr. Geo. R. Ruhle.*)

It should be worth while to analyze the motives and behavior of this first camper in the new surroundings where he plans to make his temporary home. He chooses the site in accordance with what he finds on it and utilizes this to his best advantage. In doing so he undergoes specific psychological reactions, and one of the principal ones is his reaction to obstacles or risks for his car. Instinctively he avoids rocks beyond a certain size or those with sharp edges. In the same way he will not force his car through dense growth. He sees groups of trees but not the individuals that compose them, just as we see stars in constellations. This reaction is of fundamental importance because in it lies the clue to an understanding of the tourist's unconscious shaping of the material on the ground. If the tree groups were all of circular shape every tree around the circumference of the circle would be in the same position with regard to the passing car while all the trees in the center would be automatically protected. In nature trees do not group themselves in this way. There are always irregularities in physical arrangement, and while the individuals within the group are still protected, the trees that stand out from the group and are therefore exposed on all sides except where they tie in with the other components of the group, are most exposed to sideswiping and injury. These endangered trees are the first to go. Repeated wounding may bring about death directly or may result in slow dying. Once a tree becomes unsightly it will soon be cut out. The loss of this tree which one might call the *key tree* as far as the group is concerned reduces the area of the group not merely by the actual space it occupied but by the distance to the next tree behind it. This next tree now becomes a key tree. This process continues until only a few individuals are left, spaced in such a way that the tourist no longer reacts to them as a group. Now all protection is gone, and only the largest trees have some chance of survival. (See Fig. 2.)

Fig. 3 illustrates this "group-seeing" and the resulting conditions as they exist today on a well known camp ground which has been in use only for a few years. The once rich and dense vegetation has dwindled to an open stand with wide spaces on which not a spear of grass is left. The change is due altogether to the free moving about of automobiles and to unregulated camping.

Every camp records plainly this history of a slow whittling down and shoving back of groups of vegetation, but other factors help in ruining camp sites for use. Concurrently with the breaking up of groups by automobile travel, the campers themselves break through young growth and open up the groups. Trees are chopped down for firewood or to allow for freer circulation. Trampling produces soil injury. Every tourist has his own

idea about the best place where to pitch his tent or place his eating table. New sites for the evening fire are chosen because it is unpleasant to cook while standing in the scattered ashes of an old one. In one camp on the East side of the Sierra Nevada where suitable grounds are rare, no less than 43 ash heaps from four to five feet in diameter were found on a piece of land not larger than one quarter of an acre. The ground cover is definitely destroyed and the lye from the ashes leaches into the soil with the winter rains to the detriment of the roots of shrubs and trees. The camp is rendered undesirable for the more appreciative class of tourists both on

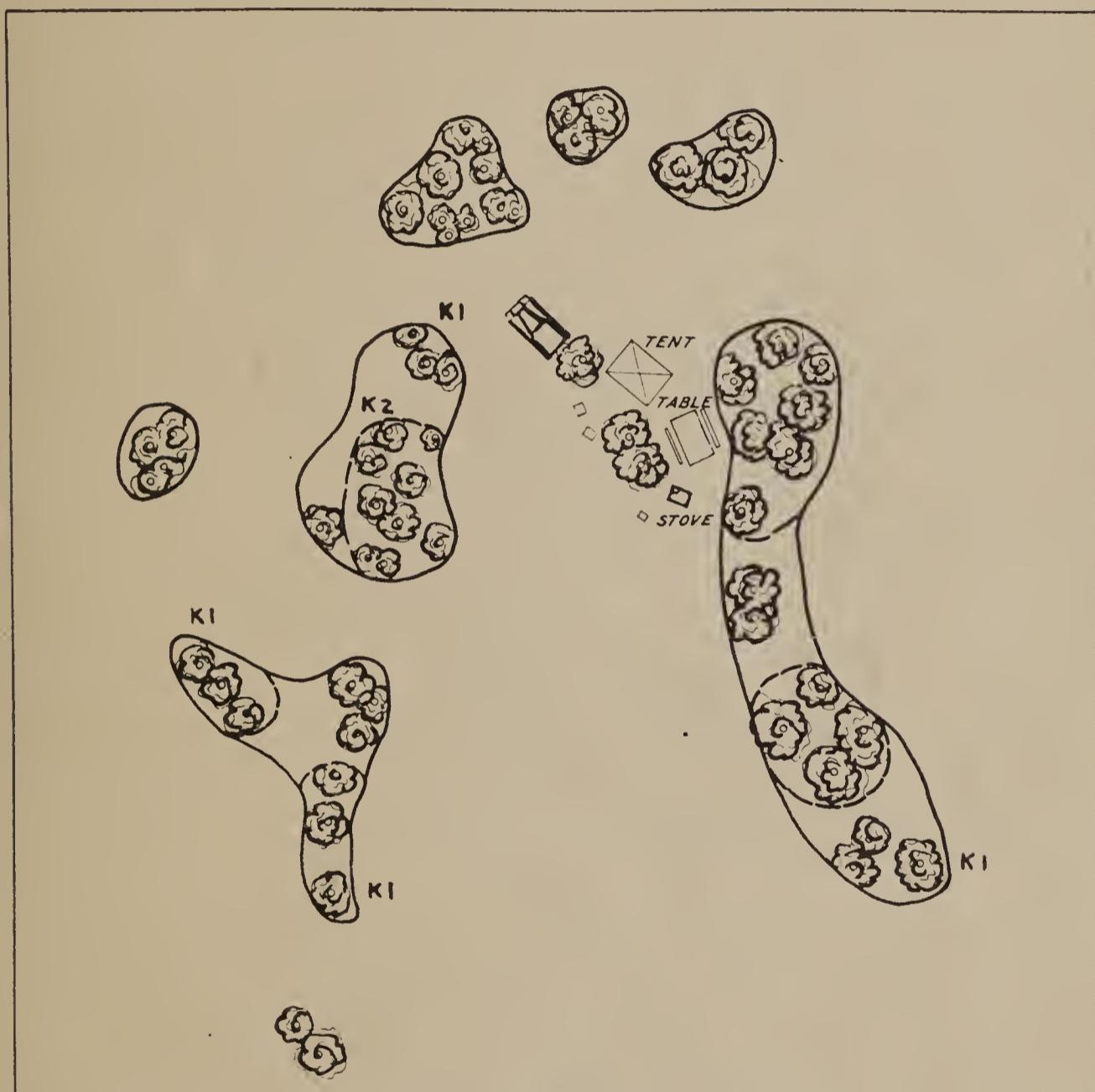


Fig. 3

The chart illustrates how trees are seen in groups by the tourist. It shows how the groups shrink to smaller groups when unregulated automobile movement kills the most exposed key trees (K 1, K 2) of the groups. This camp has been in use only a few years.

account of its dirty appearance and of the scorching of the green trees near the fires. Where the normal health of the vegetation is impaired, though not immediately endangered, by milder attacks of fungi or insects, the

additional abuse from a careless public may become the decisive factor in damaging the plant cover beyond recovery. In severe and prolonged drought periods the effect of unregulated tourist travel is particularly marked

Fig. 4 illustrates the mode in which the average camper modifies a typical virgin camp site. Swinging in from the road to the left he drives around the central clump of trees, avoiding the larger trees and groups. The tent is pitched and a place for the camp fire and for the table is selected. When he leaves he does not back out the way he came, but continues in a loop back again to the road. This first visit may not do irreparable harm,

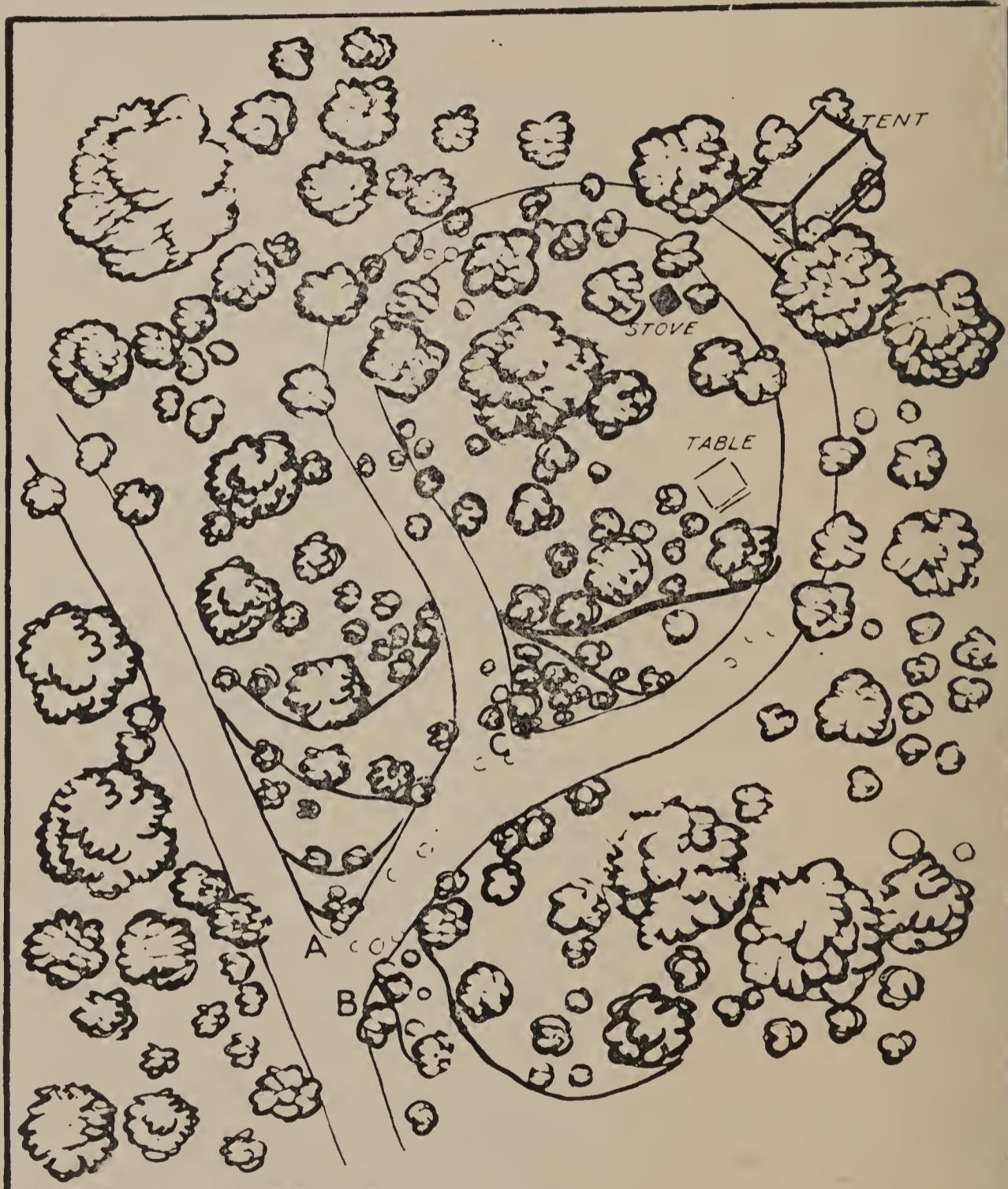


Fig. 4

Example of an unregulated "self-made" camp site. Note the waste of space and the steady whittling away of the Keys A, B and C and the ensuing recession of the groups.

but it has changed, forever, the virgin stand into an area definitely under man's influence. Three points (A, B and C) have become keys and are henceforth exposed to damage every time his car moves in or out. The next camper driving along the road, will not choose a new site but will instinctively follow the old track as the line of least resistance. The car track proves to him that others before him have found this camp site sufficiently attractive. But once within the camp site he is inclined to follow his own predilections. New car tracks are added and the camp facilities are arranged to suit his pleasure. He and every subsequent visitor add to the risk to the Keys A, B and C. When the key trees at these points finally succumb the trees back of them become secondary keys until their removal brings the next, tertiary, key trees into exposure and so forth. The group lines, as marked on the chart, recede gradually until an artificial desert mars the entrance to the camp. Similar processes go on within the camp site itself until the formerly green and attractive camp is rendered unsightly, shadeless and finally useless.

Another feature of no small importance is the great waste in space. Suitable camping grounds are no longer plentiful. Level ground, shade, pleasing vegetation, the proximity of fresh water, accessibility, in short all the factors that make a given locality suitable for camping are the same factors that have attracted men for the purpose of settling and making a home. In the National Forests and on municipally-owned land many of these localities are in private ownership, and in the National Parks much of this type of land cannot be used for camping on administrative grounds. Economy in the utilization of space then becomes an important item. The tourist, once he is given the privilege to camp, undoubtedly has the right to expect that the site he is to occupy will be large enough to accommodate his car and belongings and that it offers at least some privacy. But he is surely not entitled to more than his legitimate share of space. This legitimate share varies with the type of cover, its density, the shade it offers, the roughness of the ground and with the popularity of the camp ground.

In certain parts of the country conditions have already reached a point where the administrator in charge is hard put to it to accommodate the steadily growing influx of campers. The existing camps are either destroyed or their abandonment is in sight, and no potential camp grounds are available. The public will not accept these reasons as valid if it is to be denied what it has come to consider as its rights. The scarcity of camping grounds is particularly common in the more arid parts of the country where the type of vegetation that invites to camping is none too plentiful. But the more favored regions are confronted with the same problem though

the process leading to it may be slower in developing. Sooner or later the question will turn up as to how to handle the ever-growing floating population.

Moreover, the abandonment of an improved camp ground, besides creating more or less serious administrative complications, entails a financial loss since the monetary value of the improvements has to be written off while the establishment of new grounds demands a further outlay in cash.

THE REMEDY

If it is true that lack of regulation is the primary and underlying cause of the great damage to public camp sites the remedy is obvious. The choice of camp sites within a designated camping ground and the physical arrangement can no longer be left to the tourist but must be planned in advance, and the plan must be rigidly adhered to. It is clear that this choice must be guided by the nature of the ground, of the vegetation it supports and the local climate, with a view to the probable effects that camping will have, even if well regulated.

The *type of soil* is an important factor. Light sandy soils are less endangered from compacting by automobiles than are heavy clayey soils, and the presence of larger rocks in the soil automatically prevents a good deal of damage since the driver of a car will not voluntarily expose the tires to unnecessary injury. One of the safest camps from the point of view of permanency, established in Mount Rainier National Park, is located on an old widespread river bed, richly strewn with round boulders. The interstices between these have in the course of time come to be filled with rich soil which supports a fair stand of trees. No camper would voluntarily have driven his car over this rough ground until roads were built and some of the individual camp sites were sufficiently cleared for use. Within the camp sites enough boulders are left to prevent indiscriminate moving about of machines. The camp, though it has been used for some time, shows surprisingly little evidence of damage which is mostly confined to the carelessness of the camping public.

The *length of seasonal use* has a marked effect on what happens to the soil. At high elevations, where the season of heavy use may not exceed three months, the probability that the surface of the soil will be heavily compacted is far less than at low elevations in mild climates where, as for instance in Southern California, many camps are used throughout the entire year. To this must be added that in high altitudes the soil has a better chance for recovery during the long period of non-use. Frost-heaving

and a deep and persistent snow cover do much to break up the compaction sheet. But it must not be forgotten that the great majority of camps with heavy use are not located at high elevations, but at middle and low altitudes.

In planning, the probable intensity of use must be considered. The greater the number of visitors, the higher is the probability of injury.

The *type of vegetation* determines, to a large extent, the desirability and usefulness of a camp ground. In planning, the composition and density of the stand must be carefully considered, as well as the physical distribution of its elements. Obviously not all plants can be saved nor are they all essential. The goal to strive for is the preservation, throughout the life of the camp, of those forms of plant life that give its character to the locality as a camp and that are necessary for the maintenance of the whole vegetational unit in a sound condition. Certain plants can stand a good deal of abuse while others succumb quickly. Quaking aspens are particularly sensitive. Certain pines are relatively resistant, but others, like Sugar pine and Lodgepole pine, do not take kindly to interference. Thin-barked species in the position of key trees are particularly endangered.

Last, though not least, comes the *type of camper* that is likely to prevail at a given camp site. In general the city man does not feel at home in what to him is wild country in the relative isolation of the forest, especially at high elevations. He prefers the semi-domestication of nearby camps, easily reached and easily left. The introduction of modern speedways into the mountains tends to change this condition and to discharge the typical city tourists in larger numbers at places where they are less under supervision and consequently can do a great deal of harm. Men used to the woods and possessing an understanding of the forest born from intuition or training are far less to be feared than the average city tourist who tries to carry his city life into the forest and to whom a tree more or less means but little.

The average tourist is willing to conform, according to his understanding, to what he is supposed to do in the forest. He is amenable to suggestion, and, in general acts as he thinks others have acted before him. Hence the importance of starting a camp in such a way that no doubt is left as to the behavior and the reactions that are expected of him. The understanding of this human trait and of the tourist's desire to protect his property, particularly his car, from injury can be used to good advantage in intelligent planning. Still, it must be kept in mind that the tourist when he visits the forest seeks release from the restrictions of town and city life. He wants a certain amount of freedom, and in this mood he resents too obvious directions such as signboards with prohibitions and demands.

Better results are secured by indirection and suggestion.

The Plan. There are a few simple principles underlying camp planning which logically flow from our analysis and from the understanding of aims. They consist mainly in regulation. Camp planning does not end with the setting aside of a camp ground. Instead of permitting the campers to do their own haphazard planning, the ground must be gone over and divided up into individual camp sites of legitimate size, each one offering approximately as much privacy, shade and other advantages as the other, based on the vegetation on the ground and on the preservation of its essential features throughout the life of the camp site.

The plan is based upon the definite fixation of certain essential camp features. To these belong the automobile and the fireplace and wherever feasible, the camp table. A camp site should be laid out in such a way that it cannot easily be altered by the average camper. He will not attempt to do so if he finds it comfortable and convenient.

Each camp site should so clearly appear as a unit at the first glance that there can be no doubt in the mind of the visitor newly arriving. For administrative purposes the camp ground should be mapped and each

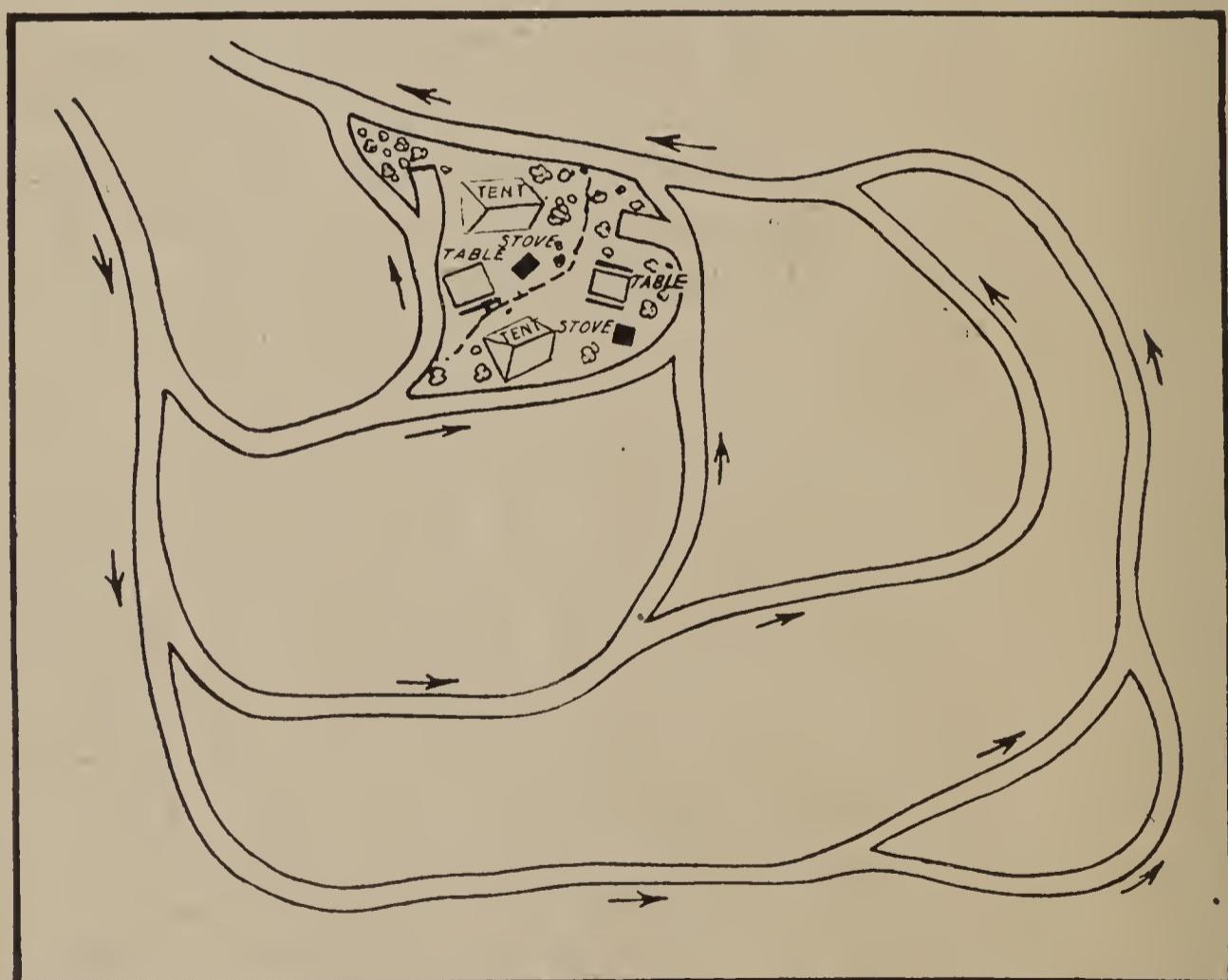


Fig. 5

Proposed layout of a camping ground under regulation, with system of one-way roads. Only one section is developed to show proposed car parking (garage spurs), tables, fireplaces and tents.

site entered upon the map with a number or other designation. In supervised camps this preparatory work will be useful in the assignment of definite camp sites to visitors.

The accessibility of each site depends on a well planned road system. The regulated camp ground should be provided with roads, laid out and made, instead of being mere tracks resulting from the chance driving of tourist cars. It is important, in the interests of space economy that they be one-way roads. Fig. 5 illustrates the principle of one-way roads. As the demand for more space increases new roads leading into the older ones may be added. The one-way road is narrower and offers less chance for breaking out into untouched vegetation. It also makes possible an essential feature of the plan here presented, the fixation of the automobile.

Since the moving *automobile*, winding in and out among the trees, is by far the most destructive element, it must be fixed at the entrance to the camp site and not be permitted to enter the latter at all. This is easily accomplished by providing for each site a definite garage in the shape of a short spur leading off at a suitable angle from the one-way road. The car easily moves off the road into the spur and backs out again without turning. It is essential that the garage spur be plainly marked. It must be immediately recognized as such. The space is cleared of vegetation, and at strategic points rocks, sufficiently heavy so as not to invite moving by the average camper, are placed in such a way that, in self-preservation, the camper will not drive over them. Where rocks are not available, low cement posts, pyramids, or imitations of boulders will perform the same duty. It will rarely be necessary to make a complete outline of the spur with these obstacles. A few, well placed, will suffice. For the accommodation of the tourists who prefer to erect a tent of the lean-to type in connection with their automobile, a number of garage spurs should be laid out for this purpose by clearing enough space on the side of the spur away from the road. The obstacles, whether rocks or concrete substitutes, remain the same. They keep the car in place without interfering with the lean-to.

The idea of fixing the *fireplace* is not a new one. In many camps permanent stoves or simple contrivances are erected in solid concrete, constructed so that they cannot be moved. The fireplace determines the physical arrangement of the outdoor home. The camp table will always find its place nearby, and the tent will not be far removed. The fireplace should be not too close to, nor too far from, the automobile and it should be so placed that the prevailing winds assure good draft without driving the smoke onto the table and tent. It is self-understood that heat damage to

trees must be avoided.

It will not always and everywhere be possible to provide a fixed place for the *camp table* on account of the heavy cost involved and also on account of the destructive habits of a large class of less forest-minded visitors. Only tables of very heavy construction involving considerable expenditure can be considered. On the other hand, the addition of a third fixed camp feature presents such advantages that in the long run they may compensate for the initial expense. The proper location of the camp table is dictated by the position of the fireplace, the car spur, and the tent.

So long as the placing of the main features, relative to each other, in the ground plan of the temporary home is logical and practical the camper will have no incentive for a rearrangement to suit his needs. He will accept the obviously best arrangement. One advantage of this reaction to the planned and improved camp site is that natural and permanent trails develop between car, fireplace, tent and table. The disorderly and destructive tramping about, that characterizes the unregulated camp, is obviated since there is no need for it.

There remains but one highly important part of the plan to be executed, namely the protection of the trees and shrubs from automobiles and, secondarily, from the camper himself. It is better to remove, beforehand, the shrubs and trees that could reasonably be regarded as being in the way or annoying to the tourist than to leave the choice to him. The aim should rather be to set up a reaction of contentment in the camper's mind and to foster a respect for the plant growth that makes his camp site a livable and pleasant place at which to stay. This selection and segregation of vegetation requires careful thought and should be done by persons qualified to judge since a mistake cannot easily and quickly be corrected. The task is much like furnishing a home overcrowded with all kinds of furniture. It consists in the wise elimination of the encumbering surplus and in making room for the car, the fireplace, the table and the tent.

The remaining trees must be adequately protected, principally from the automobile. Since the latter is now relegated to the garage spur, the main efforts will be directed towards the protection of the few key trees where the spur branches off from the main one-way road. A few large rocks or concrete pyramids, judiciously laid, will accomplish adequate protection.

Fig. 6 intends to bring out how a given unit of forest land can be treated to best advantage on the principles of regulation, of economic utilization of space and of permanency. The chart should be considered together

with Fig. 4. Both present identically the same ground, with the same trees. The road to the left now becomes a one-way road. The camp site wastefully occupied in Fig. 4 by a single camper now accommodates two parties in comfort since the track space of the moving car is saved. A row of trees separates the two camps and insures privacy. The tent is as far removed from the road as before. The car is located in its garage spur from which it can move only backwards into the road. The fireplace is permanently

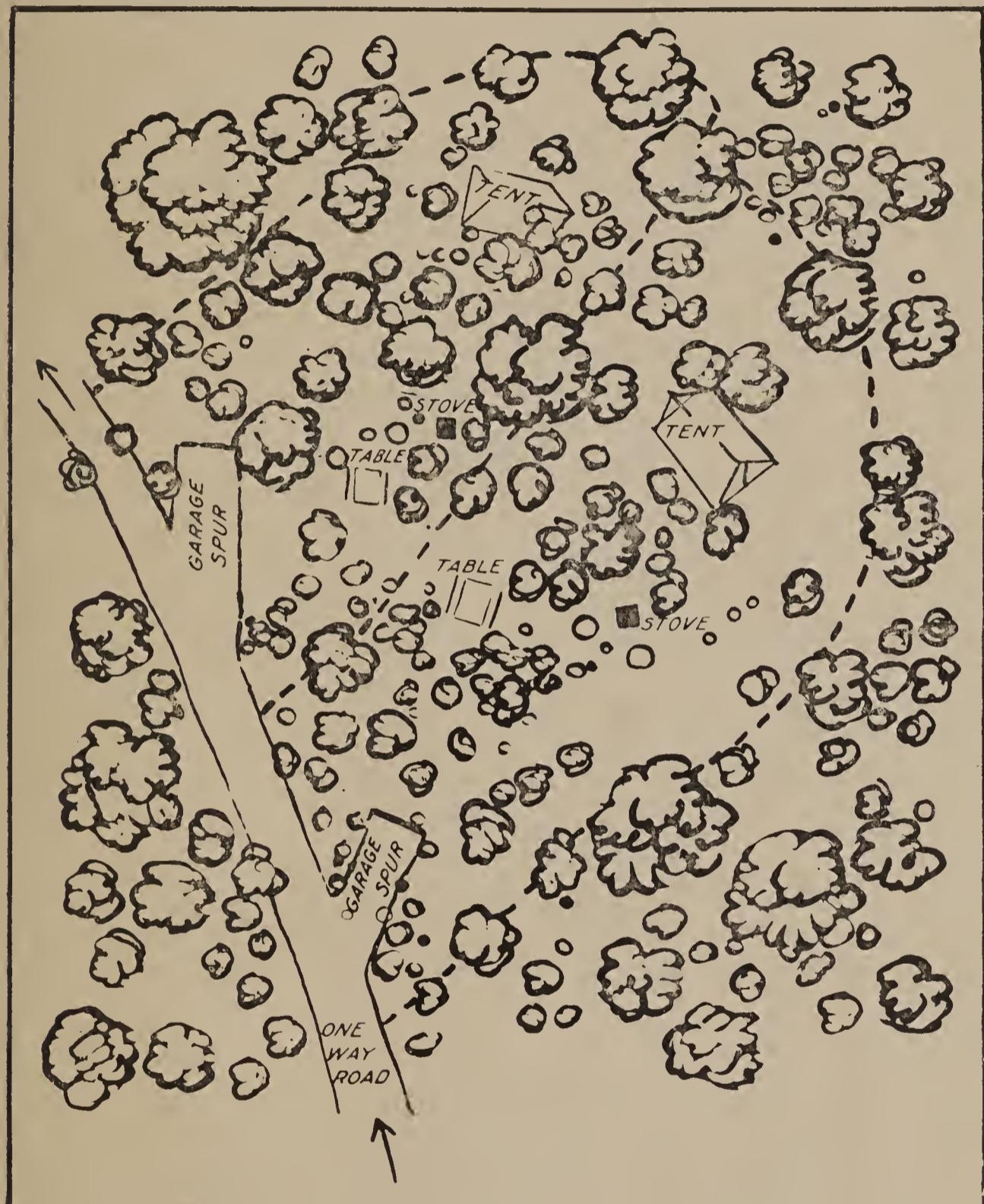


Fig. 6

Proposed plan of regulated development on a newly laid out camp ground. It shows the system of garage spurs for car parking, sites for tables, stoves and tents. The chart represents identically the same unit of land as Fig. 4 with which it should be compared. There are two camp sites instead of one, and a minimum of timber is removed.

and conveniently placed and for the table there is at least a logical place provided.

Restoration of old camp grounds. While it is easy enough to apply the plan as outlined to newly laid-out camping grounds, it is far more difficult to make over old and run-down camps, to repair the damage done and to convert them into permanently useful units before they are completely ruined. How far the administrator can go depends largely upon what is left of the vegetation and also upon his vision. Unless a camp is so far gone on the way to destruction that it appears hopeless to make an attempt at reconstruction, the guiding principle should be the introduction of made one-way roads, of the fixed garage spurs and the fixed fireplaces together with the protection of the key trees. The elimination of the moving car and of the movable fireplace will do much to bring the camp site back to tolerable conditions. Much will depend on the type of the soil, on the intensity and seasonable duration of use and on climatic conditions. The first step to take is the closing of the self-made automobile roads leading into the camp site, by placing heavy obstacles across the entrance. The soil surface, compacted by car travel and trampling can be loosened carefully with the aid of a spading fork. Planting can not be recommended while the camp is in use but becomes a valuable adjunct in the reconstruction of camp sites withdrawn from use. It is wasteful policy to wait until a camp site is so badly affected that the visiting public abandons it as unsuitable. It is far better to close it whilst there still is reasonable expectation that it might recover if taken care of. Nature will sooner or later repair some of the damage, but young trees do not always spring up where they fit into the scheme of the regulated camp. By the planting of native trees at strategic points in close imitation of the natural type the site can slowly be brought back again for future use. Landscaping in the usual sense of the word has no place in the mountain camp where the visitor seeks at least the illusion of wildness.

THE OUTLOOK

There can be no doubt that the continuation of the present lack of system and regulation, to which there are but few exceptions, must lead to an intolerable condition. In the not distant future many camp grounds will be practically ruined, and the scarcity of suitable land for the opening of new ones will be the cause of very serious embarrassment to the administration. The rate at which camp grounds are deteriorating and the ever increasing pressure from the travelling public leave little time for action if the huge recreation business on publically-owned land is to be taken

care of.

The tourist comes into camp with certain expectations, and custom as well as public advertising has led him to consider as a right what may originally have been intended as a privilege. It is too late now to change this attitude which must definitely be reckoned with. But not all tourists make the same demands. There is a vast difference between the picknicker and the camper proper, and among the latter class again a clear distinction must be made between the visitor who stops at a camp over night or at best for two nights and the tourist who desires to spend his vacation of a week or two in the same spot because he likes it. Camp administration must take cognizance of these distinctions, and it seems but reasonable that the last group be favored over the first wherever camp supervision makes it possible. The picnic group does not travel very far. It stays but a short time and by its very nature does not mix well with the true camping public. Both for administrative and social reasons it is advisable wherever possible to segregate the picnic grounds from the camping grounds. A one-way road system, in the picnic grounds, leading to a number of garage spurs arranged in herring bone fashion best solves the traffic problem and utilizes space in the most economic manner. Fixed fireplaces, either individual or community, are an essential feature of regulation.

There can be no doubt, from a comparative study of camps, that their selection has too often been a matter of administrative expediency rather than the outcome of careful and farsighted planning. Many camps are located on land wholly unsuited to the purpose. From the point of view of good administrative business the loss of a camp ground is a serious matter. The camp ground, with its investment, neither produces income nor service to the administration. Its use is, in most cases, a free gift to the public, a perpetual liability entailing ever more and more expense. It is therefore of the greatest importance that great care be exercised in the initial choice of the site for camp grounds.

All these considerations lead inevitably to the conclusion that the recreation business demands the formulation of a farsighted policy, looking ahead for decades. If for no other reason, the scarcity of suitable land demands first of all a stock-taking of available or potential camp lands. The rapid deterioration of present camps suggests a system of *camp rotation* under which those camps which are now endangered are temporarily closed whilst the tourists are directed to new grounds until the old ones have sufficiently recovered, either naturally or by artificial means.

This system of camp rotation becomes feasible only in regions in which

virgin land for alternate use is available. In semi-arid regions like the Southwest and Southern California it must be supplanted or at least supplemented by the *artificial creation of camp grounds* through systematic planting on suitable sites far ahead of actual use. The success of such planting depends on the judicious selection of sites, on the choice of suitable native species, on the amount of care that can be given the young plants until they become self-supporting and last, but not least, on a clear and sympathetic understanding of the ultimate objective, namely the creation of green and shady camps where the American lover of the out-doors can feel happy and at home.

ODDEN-9-2-82-3000